



PHENIX WORK PLANNING

procedure name

PHENIX Procedure No. PP-2.5.6.1-02


Revision: B


Date: 6/23/2016

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approvals


PHENIX Engineering
Date 7/21/16


PHENIX Work Control
Date 7/21/16

PHENIX Safety
Date Paul Smith 7/21/16

PHENIX Management
Date Edward J. [Signature] 7/21/16

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REVISION CONTROL SHEET

LETTER	DESCRIPTION	DATE	AUTHOR	APPROVED BY	CURRENT OVERSIGHT
A	Original Issue.	9/28/2012	D. Lynch	D. Lynch, P Giannotti, R Pisani, E. O'Brien	D. Lynch
B	Reference to PHENIX Awareness Training in section 4. Otherwise this procedure is unchanged from the previous revision	6/23/2016	D. Lynch	D. Lynch, P Giannotti, R Pisani, E. O'Brien	D. Lynch

Introduction

The PHENIX experiment employs a broad and diverse work force to accomplish a variety of tasks to support the day to day conduct of operations for the experiment, including fabrication, assembly, installation, operation, maintenance, troubleshooting, repair, upgrade, and deconstruction of the experiment and the equipment and subsystems which comprise it. In order to assure efficient, effective and safe accomplishment of the tasks required, work must be systematically planned and executed in accordance with such plans. The purpose of this document is to describe the nature of work planning at PHENIX and the system by which work is planned at PHENIX.

The necessity for this document comes from the nature of the PHENIX Experiment itself as a large collaborative effort of scientists, engineers and technicians from around the world working together on an extremely complex apparatus, which occupies a distinct and important space within the larger Relativistic Heavy Ion Collider (RHIC) which in turn resides in the still larger entity of Brookhaven National Laboratory (BNL). Operating at this intersection of entities there needs to be clearly defined scopes of influence at each of these levels. At the BNL level, PHENIX operations are governed by the SBMS which describes work planning requirements on a somewhat generic level. The SBMS recognizes that “one size fits all” work planning guidelines are impractical and overly burdensome and provides great latitude for customizing work planning at the organizational level, while still providing consistent general guidelines.

On the closer level of RHIC, work planning is governed by the Collider Accelerator Department (CAD) Operating Procedures Manual (OPM). The CAD OPM is designed to meet the more generic requirements of the SBMS with CAD specific procedures. At this level CAD OPM provides for general guidance for planning of all work done at CAD facilities (which include PHENIX) and specific procedures for identifying and planning work which requires “enhanced work planning” or work requiring written documentation of the hazards present in such work, procedures and methods by which the hazards are suitably minimized and protected against, and review of such procedures by appropriately skilled and trained personnel to assure the validity of the enhanced work plan.

At the PHENIX level, all SBMS requirements flow down as do the requirements of the CAD OPM for work which is planned by PHENIX personnel. PHENIX work control coordinators determine which work requires CAD enhanced work planning and assure that such work is appropriately documented and submitted to the CAD safety group for review and approval by appropriate experts at CAD prior to the commencement of such work. Not all work requires CAD enhanced planning, however, and in those cases, PHENIX work control coordinators determine the appropriate work control for such work: either worker planned work, requiring no written work planning documentation, or PHENIX local documented work planning, in which the written documented format of an enhanced work plan is utilized, but approval requirements are limited to PHENIX personnel as appropriate.

This document describes how such need is to be identified, evaluated and addressed.

1. Responsibilities

It shall be the responsibility of the PHENIX Operations Manager to assign appropriately trained and qualified PHENIX support staff personnel to serve as PHENIX work control coordinators (WCC's).

It shall be the responsibility of all WCC's to review all work to be performed at PHENIX to determine when work may be assigned to PHENIX personnel as worker planned work, when work shall be documented using local PHENIX work permits and when work requires enhanced planning and review by the CAD safety review committee.

2. Prerequisites

None

3. Precautions

None

4. Procedure

All work shall be documented as follows:

- Worker planned work is documented in the PHENIX Awareness Training, PHENIX Procedure # PP-2.5.5.6-09. All PHENIX support personnel are required to take PHENIX Awareness training and restrict their work at PHENIX to work which falls under the PHENIX Awareness training guidelines unless a PHENIX local permit is issued by a PHENIX WCC or an enhanced work permit is approved by the CAD safety review committee. When in doubt PHENIX workers shall consult with a PHENIX WCC to determine if the work falls under these guidelines
- PHENIX local work permits are prepared by PHENIX WCC's to document work which does not require an enhanced work permit reviewed and approved by CAD safety committee, but circumstances suggest that a written plan of work is appropriate. Such cases might include cases where the following are needed to perform the work
 - :
 - Drawings, sketches or diagrams to assist
 - A task list or procedure specific to this instance of work
 - A written procedure or a list of written procedures (e.g. PHENIX

controlled procedures, CAD controlled procedures, PHENIX external collaborators procedures)

- Any other occasion when a PHENIX WCC concludes that a written order for work is appropriate, but a CAD enhanced work permit is not required.
- Enhanced Work Permits are prepared by PHENIX WCC's and submitted to the CAD safety committee for review and approval. This process is documented in CAD OPM # 2.29 "C-A Procedure for Work Planning for Experimenters"

Prior to assigning work, Work Control Coordinators shall evaluate each job using the criteria in OPM-ATT 2.28.d and "Screening Guideline for Work Planning & Control and Application of the Quality Graded Approach" from BNL SBMS "Work Planning and Controls for Experiments and Operations" to determine which of the above categories the work falls under.

While a job is under way, changes to a job may require the Work Control Coordinator to re-review the job against the criteria in C-A-OPM-ATT 2.28.d, and "Screening Guideline for Work Planning & Control and Application of the Quality Graded Approach" from BNL SBMS "Work Planning and Controls for Experiments and Operations". In such cases, re-review of the work by the PHENIX WCC may change the above category. In such cases the WCC shall re-assign the work as worker planned work, PHENIX local permitted work or work requiring an Enhanced Work Permit (EWP) and proceed as above,

Worker feedback regarding the Work Planning on a specific job shall be captured in the EWP Form, PHENIX local work permit form as appropriate.

Copies of completed EWP forms with feedback are to be forwarded to C-A ESHQ Division Head, or designee, for review and shall be maintained by CAD. Copies of completed PHENIX local work permits shall be forwarded to the PHENIX WCC initiating the permit for review and shall be maintained by PHENIX engineering for future reference.

Management encourages feedback. There shall be no reprisals by anyone completing the feedback form.

The PHENIX WCC determines whether a post job review for worker planned work or PHENIX local permitted work is necessary. (Post job reviews for EWP work shall be handled in accordance with CAD OPM # 2.29 "C-A Procedure for Work Planning for Experimenters").

Criteria for determining if post job review is required include, but are not limited to:

- if the job deviated from the original work planning
- if lessons learned would be beneficial from review

The PHENIX WCC shall maintain post job reviews.

5. Documentation

Worker planned work does not require written documentation

PHENIX local permitted work is documented with a standard EWP Form and attachments (Procedures, drawings, etc.) as appropriate. Copies of PHENIX local permitted work are maintained by the PHENIX WCC and copies are also posted on the PHENIX engineering web. These shall be maintained for a period of 75 years.

Enhanced work permits are also documented with standard EWP forms and appropriate attachments. Copies of these documents are submitted to the CAD safety committee after the work has been completed and the work permit closed out. Maintenance of such documents is the responsibility of the CAD safety committee in accordance with CAD OPM # 2.29 "C-A Procedure for Work Planning for Experimenters". An additional copy of all documentation shall be maintained by the PHENIX WCC and posted on the PHENIX engineering web, the same as PHENIX local permitted work, above.

6. References

- CAD OPM # 2.29 "C-A Procedure for Work Planning for Experimenters"
- BNL SBMS "Work Planning and Controls for Experiments and Operations" Subject Area.

All documents referenced in these documents, and documents referenced in referenced documents, etc. are considered referenced herein. The order of precedence in the event of a conflict between requirements in referenced documents shall be as follows:

- i. This procedure
- ii. Documents referenced in this procedure
- iii. Documents referenced in documents referenced in this procedure
- iv. Etc.

7. Attachments

None